

## LISTING OF THE CLAIMS

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

### Listing of Claims:

Claims 1-44 (Cancelled).

Claim 45 (Currently Amended): A method of curing a composition comprising applying the composition to a three-dimensional substrate and curing by plasma in a plasma discharge chamber wherein the composition comprises (d) and either (a), (b), (c), a mixture of (a) and (b), or a mixture of (a) and (c), wherein

(a) is at least one free-radical-polymerisable compound,

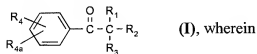
(b) is at least one compound that, under the action of an acid, is able to enter into a polymerisation, polycondensation or polyaddition reaction,

(c) is at least one compound that, under the action of a base, is able to enter into a polymerisation, polycondensation or polyaddition reaction,

and

(d) is at least one photolabile compound that is activatable by plasma discharge selected from the group consisting of formula I, II and IV;

formula I being



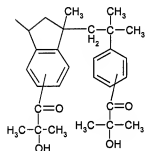
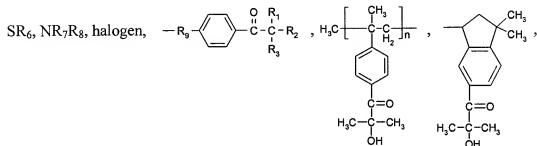
**R<sub>1</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>alkoxy;

**R<sub>2</sub>** is OR<sub>5</sub> or NR<sub>7</sub>R<sub>8</sub>;

**R<sub>3</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>3</sub>-C<sub>12</sub>alkenyl, phenyl-C<sub>1</sub>-C<sub>6</sub>alkyl or C<sub>1</sub>-C<sub>6</sub>alkylphenyl-C<sub>1</sub>-C<sub>6</sub>alkyl;

or  $R_1$  and  $R_3$ , together with the carbon atom to which they are bonded, form a cyclohexyl ring;

$R_4$  and  $R_{4a}$  are each independently of the other hydrogen,  $C_1$ - $C_{12}$ alkyl,  $C_1$ - $C_{12}$ hydroxyalkyl,  $OR_5$ ,

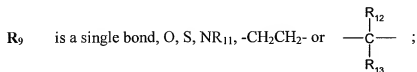


$n$  is a number from 1 to 10;

$R_5$  is selected from the group consisting of hydrogen,  $C_1$ - $C_{12}$ alkyl,  $C_1$ - $C_{12}$ alkenyl, phenyl, benzyl,  $\text{Si}(\text{CH}_3)_3$ , and  $-\text{[C}_a\text{H}_{2a}\text{X]}_b-\text{R}_{10}$ , if and only if,  $R_1$  and  $R_3$ , together with the carbon atom to which they are bonded, form a cyclohexyl ring; or  $R_5$  and  $R_6$  are each independently of the other hydrogen, is selected from the group consisting of  $C_1$ - $C_{12}$ alkyl,  $C_1$ - $C_{12}$ alkenyl, phenyl, benzyl,  $\text{Si}(\text{CH}_3)_3$  or  $-\text{[C}_a\text{H}_{2a}\text{X]}_b-\text{R}_{10}$  [;], if and only if,  $R_1$  and  $R_3$ , together with the carbon atom to which they are bonded, do not form a cyclohexyl ring;

$R_6$  is hydrogen,  $C_1$ - $C_{12}$ alkyl,  $C_1$ - $C_{12}$ alkenyl, phenyl, benzyl,  $\text{Si}(\text{CH}_3)_3$  or  $-\text{[C}_a\text{H}_{2a}\text{X]}_b-\text{R}_{10}$ ;

$R_7$  and  $R_8$  are each independently of the other hydrogen,  $C_1$ - $C_{12}$ alkyl,  $C_2$ - $C_5$ hydroxyalkyl, or  $R_7$  and  $R_8$ , together with the N atom to which they are bonded, form a 5- or 6-membered ring, which ring is either not further interrupted or is interrupted by one or more O atoms or a  $NR_{11}$  group;



**a** and **b** are each independently of the other a number from 1 to 12;

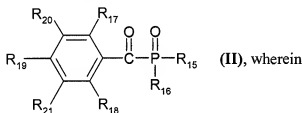
**X** is S, O or NR<sub>11</sub>;

**R<sub>10</sub>** is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or  $\text{---}\overset{\text{O}}{\overset{\parallel}{\text{C}}}\text{---}\overset{\text{R}_{12}}{\text{C}}=\overset{\text{R}_{13}}{\text{C}}\text{---}\text{R}_{14}$ ;

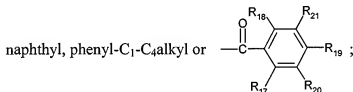
**R<sub>11</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl; and

**R<sub>12</sub>**, **R<sub>13</sub>** and **R<sub>14</sub>** are each independently of the others hydrogen or methyl;

formula II being



**R<sub>15</sub>** and **R<sub>16</sub>** are each independently of the other C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, phenyl, phenyl substituted by one or more OR<sub>22</sub>, SR<sub>23</sub>, NR<sub>24</sub>R<sub>25</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl or halogen substituents, biphenyl,



**R<sub>17</sub>** and **R<sub>18</sub>** are each independently of the other C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, CF<sub>3</sub> or halogen;

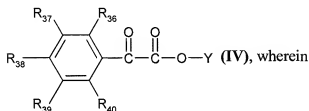
**R<sub>19</sub>**, **R<sub>20</sub>** and **R<sub>21</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, CF<sub>3</sub> or halogen;

**R<sub>22</sub>** and **R<sub>23</sub>** are each independently of each other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>2</sub>-C<sub>12</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl, benzyl, C<sub>2</sub>-C<sub>20</sub>alkyl which is interrupted by O atoms or C<sub>2</sub>-C<sub>20</sub>alkyl which is interrupted by O atoms and substituted by OH and/or SH;

**R<sub>24</sub>** and **R<sub>25</sub>** are each independently of each other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>2</sub>-C<sub>12</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl, benzyl, C<sub>2</sub>-C<sub>20</sub>alkyl which is interrupted by O atoms, C<sub>2</sub>-C<sub>20</sub>alkyl which is interrupted by O atoms and substituted by OH and/or SH; or R<sub>24</sub> and R<sub>25</sub>, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which ring is uninterrupted or is interrupted by O, S or an NR<sub>26</sub> group; and

**R<sub>26</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl;

and formula IV being



**R<sub>36</sub>**, **R<sub>37</sub>**, **R<sub>38</sub>**, **R<sub>39</sub>** and **R<sub>40</sub>** are each independently of the others hydrogen, halogen, **OR<sub>42</sub>**, **SR<sub>43</sub>**, **NR<sub>44</sub>R<sub>45</sub>**, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, naphthyl, halogen, CN and/or -OCOR<sub>41</sub>, C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, monovalent linear or branched siloxane radical, phenyl or phenyl substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl and/or one or two C<sub>1</sub>-C<sub>4</sub>alkoxy substituents;

**R<sub>41</sub>** is C<sub>1</sub>-C<sub>8</sub>alkyl, phenyl or phenyl substituted by from one to three C<sub>1</sub>-C<sub>4</sub>alkyl and/or one to three C<sub>1</sub>-C<sub>4</sub>alkoxy substituents;

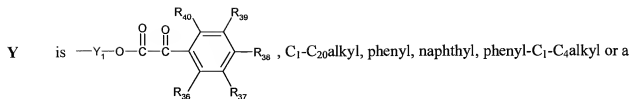
**R<sub>42</sub>** and **R<sub>43</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, phenoxy and/or -OCOR<sub>41</sub>, C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, C<sub>3</sub>-C<sub>6</sub>alkenyl, cyclopentyl, cyclohexyl, naphthyl, phenyl or phenyl substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl and/or C<sub>1</sub>-C<sub>4</sub>alkyl;

**R<sub>44</sub>** and **R<sub>45</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy and/or phenyl, C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, phenyl, -COR<sub>41</sub>, SO<sub>2</sub>R<sub>46</sub>, or R<sub>44</sub> and R<sub>45</sub>, together with the nitrogen atom to which they are bonded, form a 5-, 6- or 7-membered ring, which ring is uninterrupted or interrupted by -O- or -NR<sub>47</sub>-;

or the substituents **OR<sub>42</sub>**, **SR<sub>43</sub>**, and **NR<sub>44</sub>R<sub>45</sub>** form a 5- or 6-membered by way of the radicals **R<sub>42</sub>**, **R<sub>43</sub>**, **R<sub>44</sub>** and/or **R<sub>45</sub>** with further substituents on the phenyl ring or with one of the carbon atoms of the phenyl ring;

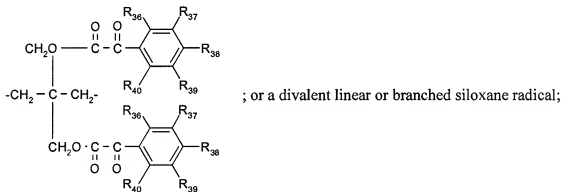
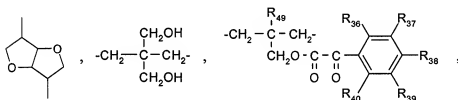
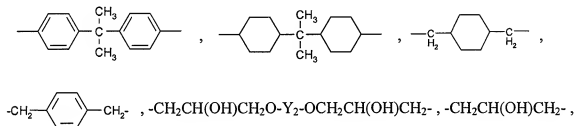
**R<sub>46</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, phenyl or 4-methylphenyl;

**R<sub>47</sub>** is hydrogen, C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>1</sub>-C<sub>8</sub>alkyl substituted by OH or C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl or phenyl substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy;

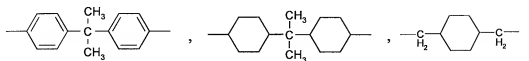


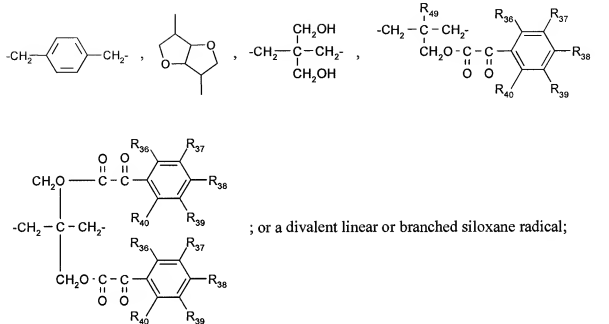
monovalent linear or branched siloxane radical;

$\text{Y}_1$  is phenylene,  $\text{C}_1\text{-C}_{12}$ alkylene,  $\text{C}_4\text{-C}_8$ alkenylene,  $\text{C}_4\text{-C}_8$ alkynylene, cyclohexylene,  $\text{C}_4\text{-C}_{40}$ alkylene interrupted by one or more  $-\text{O}-$ ,  $-\text{S}-$  or  $-\text{NR}_{48}-$ , a group



$\text{Y}_2$  is phenylene,  $\text{C}_1\text{-C}_{12}$ alkylene,  $\text{C}_4\text{-C}_8$ alkenylene,  $\text{C}_4\text{-C}_8$ alkynylene, cyclohexylene,  $\text{C}_4\text{-C}_{40}$ alkylene interrupted by one or more  $-\text{O}-$ ,  $-\text{S}-$  or  $-\text{NR}_{48}-$ , a group





**R<sub>48</sub>** is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or phenyl; and

**R<sub>49</sub>** is hydrogen, CH<sub>2</sub>OH or C<sub>1</sub>-C<sub>4</sub>alkyl.

Claim 46 (Previously Presented): A method according to claim 45, wherein component (d) in the composition is at least one compound selected from the group consisting of formula I and II.

Claim 47 (Withdrawn): A method of curing a composition comprising applying the composition to a three-dimensional substrate and curing by plasma in a plasma discharge chamber wherein the composition comprises (d) and either (a), (b), (c), a mixture of (a) and (b), or a mixture of (a) and (c), wherein

(a) is at least one free-radical-polymerisable compound,

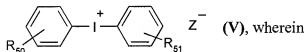
(b) is at least one compound that, under the action of an acid, is able to enter into a polymerisation, polycondensation or polyaddition reaction,

(c) is at least one compound that, under the action of a base, is able to enter into a polymerisation, polycondensation or polyaddition reaction,

and

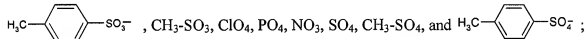
(d) is at least one photolabile compound that is activatable by plasma discharge selected from the group consisting of formula V, VI, VII and VIIa,

formula V being

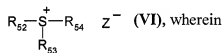


**R<sub>50</sub>** and **R<sub>51</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>20</sub>alkyl, C<sub>1</sub>-C<sub>20</sub>alkoxy, OH-substituted C<sub>1</sub>-C<sub>20</sub>alkoxy, halogen, C<sub>2</sub>-C<sub>12</sub>alkenyl, cycloalkyl; and

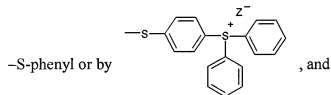
**Z** is an anion selected from PF<sub>6</sub>, SbF<sub>6</sub>, AsF<sub>6</sub>, BF<sub>4</sub>, (C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>B, Cl, Br, HSO<sub>4</sub>, CF<sub>3</sub>-SO<sub>3</sub>, F-SO<sub>3</sub>,



formula VI being

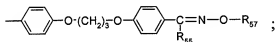
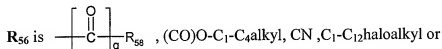
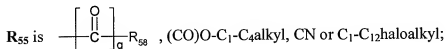
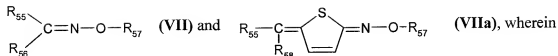


**R<sub>52</sub>**, **R<sub>53</sub>** and **R<sub>54</sub>** are each independently of the others unsubstituted phenyl, or phenyl substituted by

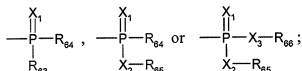


**Z** is as defined above;

formula VII and formula VIIa being



**R<sub>57</sub>** is C<sub>1</sub>-C<sub>18</sub>alkylsulfonyl, C<sub>1</sub>-C<sub>10</sub>haloalkylsulfonyl, camphorylsulfonyl, phenyl-C<sub>1</sub>-C<sub>3</sub>alkylsulfonyl, C<sub>3</sub>-C<sub>30</sub>cycloalkylsulfonyl, phenylsulfonyl, naphthylsulfonyl, anthracylsulfonyl or phenanthrylsulfonyl, unsubstituted or substituted by one or more halogen, C<sub>1</sub>-C<sub>4</sub>haloalkyl, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>16</sub>alkyl, phenyl, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenoxy, C<sub>1</sub>-C<sub>4</sub>alkyl-O(CO)-, C<sub>1</sub>-C<sub>4</sub>alkyl-(CO)O-, R<sub>67</sub>OSO<sub>2</sub>- and/or -NR<sub>60</sub>R<sub>61</sub> substituents; C<sub>2</sub>-C<sub>6</sub>haloalkanoyl, halobenzoyl,



**X<sub>1</sub>, X<sub>2</sub> and X<sub>3</sub>** are each independently of the others O or S;

**q** is 0 or 2;

**R<sub>58</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, cyclohexyl, camphoryl, unsubstituted phenyl, or phenyl substituted by one or more halogen, C<sub>1</sub>-C<sub>12</sub>alkyl, OR<sub>59</sub>, SR<sub>59</sub> or NR<sub>60</sub>R<sub>61</sub> substituents;

**R<sub>59</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl;

**R<sub>60</sub> and R<sub>61</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl, or R<sub>60</sub> and R<sub>61</sub>, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which ring is uninterrupted or interrupted by O or an NR<sub>62</sub> group;

**R<sub>62</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>3</sub>hydroxyalkyl;

**R<sub>63</sub>, R<sub>64</sub>, R<sub>65</sub> and R<sub>66</sub>** are each independently of the others C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl, phenyl or phenyl substituted by C<sub>1</sub>-C<sub>4</sub>alkyl or halogen; and



**R<sub>67</sub>** is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl or tolyl.

Claim 48 (Currently Amended): The method according to claim 45, wherein the composition comprises, in addition to the photolabile component (d), other additives (h), sensitiser sensitizer compounds (f) and/or dyes or pigments (g).

Claim 49 (Previously Presented): The method according to claim 48, wherein the composition comprises at least one light stabiliser or/and at least one UV absorber compound.

Claim 50 (Previously Presented): The method according to claim 45, wherein the composition is a surface coating.

Claim 51 (Previously Presented): The method according to claim 45, wherein the composition is a printing ink.

Claim 52 (Previously Presented): The method according to claim 45, wherein the composition comprises as polymerisable component solely free-radical-polymerisable compounds (a).

Claim 53 (Previously Presented): The method according to claim 52, wherein the free-radical-polymerisable compound comprises at least one compound selected from the group consisting of mono-, di-, tri- or tetra-functional acrylate monomers and mono-, di-, tri- or tetra-functional acrylate-functional oligomers.

Claim 54 (Previously Presented): The method according to claim 45, wherein the composition comprises as polymerisable component solely cationically polymerisable or crosslinkable compounds (b).

Claim 55 (Previously Presented): The method according to claim 45, wherein the composition comprises as polymerisable component a mixture of at least one free-radical-polymerisable compound (a) and at least one cationically polymerisable compound (b).

Claim 56 (Previously Presented): The coated substrate which is coated on at least one surface by means of the method according to claim 54.

Claim 57 (Previously Presented): A coating obtained by a method according to claim 45.

Claim 58 (Withdrawn): A method of curing a composition wherein the composition comprises

(1) a combination of at least one electron acceptor maleimide compound and at least one electron donor vinyl ether compound; and

(2) optionally at least one free-radical-polymerisable compound (a),  
wherein the curing is carried out in a plasma discharge chamber.

Claim 59 (Previously Presented): The method according to claim 45 of curing a composition wherein the composition comprises (a), (d) and either (a1), (a2) or a mixture of (a1) and (a2) wherein

(a) is at least one free-radical-polymerisable component having at least one ethylenically unsaturated double bond, the free-radical-polymerisable component optionally additionally being functionalised with OH, NH<sub>2</sub>, COOH, epoxy or NCO groups;

(a1) is a mixture of at least one compound selected from the group consisting of polyacrylates and polyester polyols, and at least one compound selected from the group consisting of melamine, melamine derivatives and blocked or non-blocked polyisocyanates;

(a2) is a mixture of at least one compound selected from the group consisting of carboxyl-, anhydride- or amino-functional polyesters and carboxyl-, anhydride- or amino-functional polyacrylates, and at least one compound selected from the group consisting of epoxy-functional polyesters and polyacrylates;

and

(d) is at least one photolatent compound of that is activatable by plasma discharge selected from the group consisting of formula I, II, and IV;

wherein

the curing of the composition is carried out in a plasma discharge chamber and, optionally, thermal pre- or after-treatment is carried out.

Claim 60 (Previously Presented): The method of curing a composition according to claim 45 for producing mouldings from composite materials, wherein a support is impregnated with the composition and introduced into a mould; wherein the curing is carried out in a plasma discharge chamber and, optionally, thermal aftertreatment is carried out.

Claim 61 (Withdrawn – Currently Amended): The method according to claim 47, wherein the composition comprises, in addition at least one light stabiliser and/or at least one UV absorber compound and optionally other additives (h), ~~sensitiser~~ sensitizer compounds (f) or dyes or pigments (g).

Claim 62 (Withdrawn): The method according to claim 47, wherein the composition is a surface coating.

Claim 63 (Withdrawn): The method according to claim 47, wherein the composition comprises as polymerisable component solely cationically polymerisable or crosslinkable compounds (b).

Claim 64 (Withdrawn): The method according to claim 47, wherein the composition comprises as polymerisable component a mixture of at least one free-radical-polymerisable compound (a) and at least one cationically polymerisable compound (b).

Claim 65 (Withdrawn): The method according to claim 47 of curing a composition wherein the composition comprises (a), (d) and either (a1), (a2) or a mixture of (a1) and (a2) wherein

(a) is at least one free-radical-polymerisable component having at least one ethylenically unsaturated double bond, the free-radical-polymerisable component optionally additionally being functionalised with OH, NH<sub>2</sub>, COOH, epoxy or NCO groups; and

(a1) is a mixture of at least one compound selected from the group consisting of polyacrylates and polyester polyols, and at least one compound selected from the group consisting of melamine, melamine derivatives and blocked or non-blocked polyisocyanates;

(a2) is a mixture of at least one compound selected from the group consisting of carboxyl-, anhydride- or amino-functional polyesters and carboxyl-, anhydride- or amino-functional polyacrylates, and at least one compound selected from the group consisting of epoxy-functional polyesters and polyacrylates;

and

(d) is at least one photolabile compound of that is activatable by plasma discharge selected from the group consisting of formula V, VI, VII and VIIa;

wherein

the curing of the composition is carried out in a plasma discharge chamber and, optionally, thermal pre- or after-treatment is carried out.

Claim 66 (Withdrawn): The method of curing a composition according to claim 47 for producing mouldings from composite materials, wherein a support is impregnated with the composition and introduced into a mould; wherein the curing is carried out in a plasma discharge chamber and, optionally, thermal aftertreatment is carried out.

Claim 67 (Withdrawn - Currently Amended): A method of curing a composition according to claim 45 wherein (d) comprises at least one ~~compound~~ compound of formula I and one compound of formula II.